B1 Cont'd

wherein the presence of a [mutation in the coding region of the] human *HKNG1* gene product indicates that the individual has or is at risk of developing a bipolar affective disorder or schizophrenia.

Please add the following new claims:

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--19. (New) A method for identifying an individual having or at risk of developing a bipolar affective disorder or schizophrenia comprising the step of detecting the presence or absence of a *HKNG1* gene product in a patient sample wherein said method comprises the steps of:

a) incubating a sample in the presence of a detectably labeled antibody capable of identifying the *HKNG* gene product; and

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b) assaying for the presence or absence of the *HGNG* gene product,

wherein the presence of aberrant level of the human *HKNG1* gene product indicates that the individual has or is at risk of developing a bipolar affective disorder or schizophrenia.

Claim 20. (New) The method according to Claim 1, wherein said assay step comprises an immunoassay.

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Claim 21. (New) The method according to Claim 1, w herein said immunoassay is an Elisa.

Claim 22. (New) The method according to Claim 1, wherein said *HGNG* gene product is detected in a blood, serum, lymph, or thoracentesis sample.

Claim 23. (New) The method according to Claim 1, wherein said *HGNG* gene product is detected in cerebrospinal fluid.

Claim 24. (New) The method according to Claim 1, wherein said *HGNG* gene product is detected *in situ* in a histological specimen.

Claim 25. (New) The method according to Claim 24, wherein said *HGNG* gene product is detected on the surface of a cell

Claim 26. (New) The method according to Claim 1, wherein said *HKNG* product is a conserved variant or peptide fragment thereof.

Claim 27. (New) The method of Claim 1, wherein said *HKNG* gene product comprises an amino acid sequence which is different from the amino acid sequence depicted in SEQ ID NO:2.

Claim 28. (New) The method of Claim 1, wherein said *HKNG* gene product comprises an amino acid sequence which is different from the amino acid sequence depicted in SEQ ID NO:4.

Claim 29. (New) The method according to Claim 1, wherein said *HKNG* gene product comprises the amino acid sequence encoded by a nucleic acid molecule that hybridizes under highly stringent conditions to the nucleic acid insert of the clone contained in ATCC accession No. 98351, wherein said stringent conditions comprise hybridization in 0.5 M $NaHPO_4$, 7% SDS, 1 mM EDTA at 65 °C, and washing in 0.1xSSC/0.1%SDS at 68 °C.

in ATCC accession No. 98351, wherein said stringent conditions comprise hybridization in 0.5 M $NaHPO_4$, 7% SDS, 1 mM EDTA at 65 °C, and washing in 0.1xSSC/0.1%SDS at 68 °C.

Claim 30. (New) The method of Claim 29, wherein said *HKNG* gene product comprises the amino acid sequence of SEQ ID NO:2 with a substitution of a lysine for a glutamic acid at amino acid residue 202 of SEQ ID NO:2.

Claim 31. (New) The method of Claim 29, wherein said *HKNG* gene product comprises the amino acid sequence of SEQ ID NO:4 with a substitution of a lysine for a glutamic acid at amino acid residue 184 of SEQ ID NO:4.--

## REMARKS

Claims 1-18 were pending. Claim 1 has been amended. Claims 2-18 have been canceled and new Claims 19-30 have been added.

In particular, support for Claim 1 may be found in the specification at page 8, line 31-page 9, line 8. Support for recitation of aberrant level of HKNG gene product in new Claim 19 may be found in the Specification at page 12, lines 13-20. Claims 20 and 21 may be found in the specification at page 44, lines 27-32 and page 46, lines 29-32. Support for Claims 22 and 23 for the detection of HKNG products in a particular biological sample may be found in the specification at page 34, lines 22-26. Support for new Claim 24 may be found in the specification at page 45, lines 8-10. Support for new Claim 25 may be found in the specification at page 45, lines 10-16. Support for new Claim 26 may be found in Claim 2 as originally filed. Support for new Claim 27 may be found in Claim 3 as originally filed. Support for new Claim 29 may be found in the specification at page 14, lines 19-22. Support